

REMARKS

In the last Office Action, the Examiner objected to claims 1, 5 and 9 as containing informalities. The abstract was objected to as failing to comply with MPEP §608.01(b). Claims 1-5 and 9-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over applicant's prior art disclosure in Fig. 5 ("APD") in view of U.S. Patent No. 4,880,490 to MacIntyre or U.S. Patent No. 3,369,952 to Rieger. Claims 6-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over APD in view of MacIntyre or Rieger and further in view of U.S. Patent No. 5,910,227 to Mistyurik et al. ("Mistyurik"). Additional art was cited of interest.

In accordance with the present response, the specification has been suitably revised to correct informalities, provide antecedent basis for the claim language, and to bring it into better conformance with U.S. practice. Original claims 1-10 have been replaced by new claims 11-25 to further patentably distinguish from the prior art of record, overcome the Examiner's objections, improve the wording, and bring the claims into better conformance with U.S. practice. New claims 26-31 have been added to provide a fuller scope of coverage. A new abstract in compliance with MPEP §608.01(b) and which more clearly reflects the invention to which the new claims are directed has been substituted for the original abstract.

In view of the foregoing, applicant submits that the objections to the abstract and claims have been overcome and should be withdrawn.

Applicant respectfully requests reconsideration of his application in light of the following discussion.

Brief Summary of the Invention

The present invention is directed to a label peeling mechanism and to a label printer apparatus having the label peeling mechanism.

Fig. 5 shows a conventional label printer apparatus P having a label peeling mechanism. As described in the specification (pgs. 1-6), the conventional label printer apparatus has a label sheet Y comprised of labels L mounted on a backing strip D and a first conveying unit 10 for conveying the label sheet Y in a direction S1 toward a label peeling member 30 at which point the labels L are peeled from the backing strip D. After the labels L are peeled from the backing strip D, the backing strip D is nipped between the first conveying unit 10 and the second conveying unit 20 and is pulled in a direction S2. A printing unit H prints on a surface of the labels L prior to the label peeling operation.

One problem with the foregoing conventional label printer apparatus is that when the backing strip D is nipped

between the first conveying unit 10 and the second conveying unit 20 and is pulled in the direction S2, a skid (i.e., freewheeling) occurs on a peripheral surface of the second conveying unit 20 which is in slidable contact with the backing strip D. When such skid occurs, a difference is caused between the speed at which the label sheet Y is conveyed in the S1 direction by the first conveying unit 10 and the speed at which the backing strip D is conveyed in the S2 direction by the first conveying unit 10 and the second conveying unit 20. Consequently, slack occurs in the printed label sheet Y between the first conveying unit 10 and the label peeling member 30. As a result of this slack, the labels L are not peeled from the backing strip D and are conveyed with the backing strip D in the S2 direction.

In order to prevent the foregoing label peeling failure, it has been required conventionally to manually pull the end portion of the backing strip D in an S3 direction shown in Fig. 15 to eliminate the slack. Alternatively, a separate mechanism for driving the second conveying unit 20 has been provided to eliminate the slack. However, the manual procedure for removing the slack is time consuming and causes interruptions in the label peeling operation. Furthermore, the addition of the separate mechanism for driving the second conveying unit increases the overall size and manufacturing cost of the conventional label printer apparatus.

The present invention overcomes the drawbacks of the conventional art. Figs. 1-4B show an embodiment of a label printer apparatus having a label peeling mechanism according to the present invention embodied in the claims. In the embodiment shown, the label printing peeling mechanism of the present invention is configured for peeling labels L having a non-adhesive surface and an adhesive surface removably adhered at preselected intervals to a front surface of a backing member D of a continuous label strip Y which is coiled into a roll. The label peeling mechanism has a discharge frame F1 having a first discharge opening 610 and a second discharge opening 600. A first conveying unit 10 conveys the continuous label strip Y in a first direction S1. A label peeling member 30 contacts a rear surface of the backing member D when the continuous label strip Y is conveyed by the first conveying unit 10 to thereby peel the labels L from the front surface of the backing member D and convey the peeled labels L towards the first discharge opening 610 of the discharge frame F1. A second conveying unit 20 pulls the backing member D from which the labels L have been peeled in a second direction S2 different from the first direction S1 and conveys the pulled backing member D toward the second discharge opening 600 of the discharge frame F1.

According to the present invention, a slack preventing member 40 integral with the discharge frame F1 effectively suppresses any slack of the continuous label strip Y. The slack preventing member 40 is disposed opposite to and confronts the non-adhering surface of each of the labels L disposed between the first conveying unit 10 and the label peeling member 30 during conveyance of the continuous label strip Y by the first conveying unit 10 in the first direction S1.

By the foregoing construction, the label peeling mechanism according to the present invention has a slack preventing member which suppresses slack in the continuous label strip and prevents the labels from being conveyed together with the backing member in the second direction. Furthermore, by making the slack preventing member integral with the discharge frame, slack in the continuous label strip is effectively suppressed without the necessity of providing additional structure for suppressing the slack, as required by the conventional art.

The prior art of record does not disclose or suggest the subject matter recited in newly added claims 11-31.

New independent claim 11 is directed to a label peeling mechanism for peeling labels having a non-adhesive surface and an adhesive surface removably adhered at

preselected intervals to a front surface of a backing member of a continuous label strip which is coiled into a roll. Claim 11 requires that the label peeling mechanism has a discharge frame having a first discharge opening and a second discharge opening, a first conveying unit for conveying the continuous label strip in a first direction, a label peeling member for contacting a rear surface of the backing member when the continuous label strip is conveyed by the first conveying unit to thereby peel the labels from the front surface of the backing member and convey the peeled labels towards the first discharge opening of the discharge frame, and a second conveying unit for pulling the backing member from which the labels have been peeled in a second direction different from the first direction and for conveying the pulled backing member toward the second discharge opening of the discharge frame. Claim 11 further requires a slack preventing member integral with the discharge frame for suppressing slack of the continuous label strip, the slack preventing member being disposed opposite to and confronting the non-adhering surface of each of the labels disposed between the first conveying unit and the label peeling member during conveyance of the continuous label strip by the first conveying unit in the first direction.

The prior art of record does not disclose or suggest the structural combination of the label peeling mechanism recited in independent claim 11. For example, APD discloses a label peeling mechanism as described in the specification and reiterated herein. As recognized by the Examiner, APD does not disclose or suggest a slack preventing member integral with the discharge frame for suppressing slack of the continuous label strip, as recited in claim 11.

Rieger discloses a label dispenser 10 including a flat mounting plate 11 having a drive mechanism 12 mounted on one side thereof, and a tape conveying mechanism 14 on the other side thereof (Figs. 1-2). A tape 70 with labels 101 is fed between guide rollers 107 and a peeler plate 100 and then the labels 101 are separated from the tape 70. Contrary to the Examiner's contention, the guide rollers 107 in Rieger do not function as slack preventing members for suppressing slack in the tape 70, but rather function to "convey" and "guide" the tape through the peeler plate 100 (i.e., similar to the conveying and guiding functions of the roller 10 in the conventional label peeling mechanism shown in Fig. 15) to cause the labels 101 to be peeled from the tape 70. Even if it were proper to interpret the function of the guide rollers 107 to include a slack suppressing function, Rieger nevertheless fails to disclose or suggest a slack preventing

member which is integral with a discharge frame of the label peeling mechanism, as required by independent claim 11. In this regard, the guider rollers 107 in Rieger are clearly not integral with a discharge frame of the label peeling mechanism.

Likewise, Rieger does not disclose or suggest a slack preventing member disposed opposite to and confronting the non-adhering surface of each of the labels disposed between the first conveying unit and the label peeling member during conveyance of the continuous label strip by the first conveying unit in the first direction, as recited in claim 11. For example, in Rieger the guide rollers 107 are disposed opposite to and confront the peeler plate 101, and thus the label surface which the guide rollers 107 are opposite to and confront is disposed between the guide rollers 107 and the peeler plate 101. Stated otherwise, the surface of the label to which the guide rollers 107 are opposed and confront is not disposed between the tape conveying mechanism 14 (e.g., conveying unit) and the peeler plate 101.

MacIntyre discloses an adhesive backed element applicator having a discharge frame with side walls 18, 20 forming extensions 32, 34, and a plate 36 defining a slit 38 (Fig. 1-5). A web 16 comprised of a backing member supporting adhesive backed elements 14 is adapted to pass through the

slit 38 and around a rotatable bar 40 which functions as a peeling member for peeling or stripping adhesive backed elements 14 from the backing member. A conveying unit 30 conveys the web 16 toward the slit 38. A curved tongue member 42 is mounted on the plate 36 above the slit 38 and functions as an applicator means for bringing stripped adhesive backed elements 14 into contact with a desired surface.

Contrary to the Examiner's contention, the plate 36 in MacIntyre does not function as a slack preventing member for suppressing slack in the web 16, but rather functions to "cover" and presumably "guide" the portion of the web 16 which is adjacent to is subsequently passed through the slit 38. However, even if it were proper to interpret the function of the plate 16 to include a slack suppressing function, MacIntyre nevertheless fails to disclose or suggest a slack preventing member which is integral with a discharge frame of the label peeling mechanism, as required by independent claim 11. In this regard, the plate 36 in MacIntyre is clearly not integral with a discharge frame of the applicator.

Likewise, MacIntyre does not disclose or suggest a slack preventing member disposed opposite to and confronting the non-adhering surface of each of the labels disposed between the first conveying unit and the label peeling member during conveyance of the continuous label strip by the first

conveying unit in the first direction, as recited in claim 11.

For example, in MacIntyre the plate 36 is not disposed opposite to and does not confront a non-adhering surface of each of the adhesive backed elements disposed between the conveying unit 30 and the peeling member 40 during conveyance of the web 16 toward the slit 38.

Mistyurik discloses a hand-held labeler and was cited by the Examiner for its disclosure of a pivoting frame which facilitates replacement of a label web. However, as recognized by the Examiner, Mistyurik does not disclose or suggest the structural combination of the label peeling mechanism recited in independent claim 11, including a slack preventing member integral with the discharge frame for suppressing slack of the continuous label strip, the slack preventing member being disposed opposite to and confronting the non-adhering surface of each of the labels disposed between the first conveying unit and the label peeling member during conveyance of the continuous label strip by the first conveying unit in the first direction, as recited in claim 11.

Claims 12-25 depend on and contain all of the limitations of independent claim 11 and, therefore, distinguish from the references at least in the same manner as claim 11.

New independent claim 26 is directed to a label peeling mechanism and requires peeling means for peeling adhesive backed labels from a backing member of a continuous label strip, conveying means for conveying the continuous label strip to the peeling means, a discharge frame having a discharge opening for discharging the adhesive backed labels peeled by the peeling means from the backing member of the continuous label strip, and slack preventing means integral with the discharge frame for suppressing slack of the continuous label strip as the adhesive backed labels are peeled by the peeling means from the backing member of the continuous label strip. No corresponding structural combination is disclosed or suggested by the prior art of record as set forth above for independent claim 11.

Claims 26-31 depend on and contain all of the limitations of independent claim 26 and, therefore, distinguish from the references at least in the same manner as claim 26.

In view of the foregoing amendments and discussion,
the application is believed to be in allowable form.
Accordingly, favorable reconsideration and allowance of the
claims are most respectfully requested.

Respectfully submitted,

ADAMS & WILKS
Attorneys for Applicant

By: 

Bruce L. Adams
Reg. No. 25,386

50 Broadway
31st Floor
New York, NY 10004
(212) 809-3700

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Debra Buonincontri

Name



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October 29, 2004

Date